

APPLICATION  
FOR  
UNITED STATES LETTERS PATENT

TITLE: WATER-RETENTION DAM FOR SHOWER  
APPLICANT: KEVIN ROSS AND RICHARD A. MILLARD, JR.

CERTIFICATE OF MAILING BY EXPRESS MAIL

Express Mail Label No. EV331654828US

April 15, 2004  
Date of Deposit

## Water-Retention Dam for Shower

### **TECHNICAL FIELD**

The present invention relates to showers for bathing.

### **BACKGROUND**

Standard showers for bathing generally include an apron for retaining water  
5 during use. In shower/bathtub combinations, the wall of the bathtub serves as the apron. On the other hand, shower-only facilities include a shower basin having a molded flange or lip for maintaining water within the shower.

### **SUMMARY**

In a general aspect of the invention, a water retention dam includes a collapsible  
10 outer shell having an inner chamber and at least one surface for preventing the passage of water, the outer shell having a first surface configured to serve as a barrier to water and a second surface for attachment to the floor. The second surface has a recess for receiving adhesive.

Embodiments of this aspect of the invention may include one or more of the  
15 following features. The outer shell is rubber with a first surface that is arch-shaped, and it includes an air-filled chamber. The water-retention dam further includes a tape positioned within the recess. The adhesive is water-resistant and is applied to the tape. The tape is also water-resistant.

Among other advantages, the water retention dam has the ability to absorb the  
20 impact energy of a rolling wheelchair or foot, while maintaining water within the shower during use. The water retention dam is particularly advantageous for persons with temporary or permanent disabilities where use of a conventional shower would be more difficult or impossible.

The details of one or more embodiments of the invention are set forth in the  
25 accompanying drawings and the description below. Other features, objects, and advantages of the invention will be apparent from the description and drawings, and from the claims.

## DESCRIPTION OF DRAWINGS

FIG. 1 is a perspective view of a handicap shower.

FIG. 2A is a perspective view of a collapsible dam.

FIG. 2B is an enlarged cross-sectional front view of the collapsible dam of Fig.

5 2A.

FIG. 3 is a side view of the end cap and collapsible dam of Fig. 2A.

FIG. 4 is an alternative embodiment of a collapsible dam.

## DETAILED DESCRIPTION

Referring to Fig. 1, a barrier-free, curbless shower 100 is shown having a one-  
10 piece molded fiberglass construction and a slip-resistant floor 130. Unlike standard  
tub/showers, curbless shower 100 does not include an apron. Thus, access into and out of  
curbless shower 100 is made easier, an advantage for senior citizens and the handicapped  
(e.g., those requiring a wheelchair). Shower 100 includes hand-rails 120, a shower wand  
assembly 125 attached to the walls 105 of the shower, and a drain 135 recessed within  
15 shower floor 130.

Referring to Figs. 2A and 2B, shower 100 includes a water retention collapsible  
dam 140 for maintaining water within the shower during use. Water retention collapsible  
dam 140 is in the form of an elongated member 205 having a flat lower surface 230 (Fig.  
2B) that contacts floor 130 and a curved upper surface 225. In this embodiment, curved  
20 upper surface 225 is in the shape of a dome and has a generally triangular cross-section.

Collapsible dam 140 is made from a compressible material (e.g., a closed cell  
Ethylene-Propylene-Diene-Monomer (EPDM) sponge rubber) which contains porous  
holes 235. The material is preferable fungus resistant. At its core, collapsible dam 140  
includes a cylindrical air-filled passage 220 extending along its entire length to further  
25 enable the compressibility of the dam.

The bottom of flat lower surface 230 includes a recessed groove 240 which holds  
a strip of self-adhesive tape 210 for firmly holding the dam to slip-resistant floor 130.  
Adhesive tape 210 is water resistant for durability in the shower setting, and is double-  
sided to permit easy attachment to recessed groove 240 and to shower floor 130. In order  
30 to allow collapsible dam 140 to spread the impact energy from a rolling wheelchair or

foot along the length of the dam, adhesive tape 210 does not extend to the end tips 200 (Fig. 2A) of collapsible dam 140. Although, in other embodiments, adhesives can be substituted for self-adhesive tape 210, using tape 210 provides a simple and clean method for attaching collapsible dam 140 to floor 130.

5 Collapsible dam 140 extends along shower floor 130 (Fig. 2A) to the wall radius 110. Dam 140 then curves upwardly along shower wall 105. End caps 115 can be attached at the end tip 200 of collapsible dam 140. Installation of end caps 115 helps to seal elongated structure 205 and to provide a finished look. End caps 115 also can keep the shower curtain inside collapsible dam 140.

10 In one embodiment, using a properly sized curtain with heavy tape weights in combination with collapsible dam 140 effectively prevents water spillage. In addition, the outer edges 245 beneath collapsible dam 140 may be caulked to prevent soap and shower debris from lodging beneath collapsible dam 140.

Referring to Fig. 3, end cap 115 is a four-sided figure with a flat bottom surface 305 having contact with shower wall 105, a curved upper surface 310 directly opposite to flat surface 305, and a first side surface 320 and a second side surface 315 located at the polar ends. In this embodiment, curved upper surface 310 is in the arch-shape of a dome and has a generally triangular-cross section. First side surface 320 is sloped inwardly and located distally from elongated structure 205, while second side surface 315 is located proximally and attaches to elongated structure 205. Second side surface 315 features a recessed interior with plug 300 which protrudes from its center. Plug 300 fits snugly into opening 305 of air-filled passage 220, thus sealing the water-retention collapsible dam.

Another embodiment (Fig. 4) shows water-retention collapsible dam 140 attached to shower floor 130 at an elevated angle.

25 In other embodiments, curved upper surface 225 may be formed in a shape other than a dome, so long as collapsible dam 140 maintains the functionality of retaining water within the shower during use.

The foregoing description is considered as illustrative only of the principles of the invention. Further, since numerous modifications and changes will readily occur to those skilled in the art, it is not desired to limit the invention to the exact construction and operation shown and described, and accordingly, all suitable modifications and

equivalents may be resorted to, falling within the scope of the invention. Thus, it will be apparent to those skilled in the art that many changes and substitutions can be made to the preferred embodiment described without departing from the spirit and scope of the present invention as defined by the following claims.